

REMARKS

INTRODUCTION:

In accordance with the foregoing, claims 1-5, 7, and 14-15 have been amended. No new matter is being presented, and approval and entry are respectfully requested.

Claims 1-15 are pending and under consideration.

REJECTION UNDER 35 U.S.C. §112:

In the Office Action, at page 2, item 3, the Examiner rejected claims 1-15 under 35 U.S.C. §112, second paragraph, for the reasons set forth therein. The reasons for the rejection are set forth in the Office Action and therefore not repeated. Applicants traverse this rejection and respectfully request reconsideration.

The Examiner submits that the terminology "wherein a display line pitch is smaller than a cell arrangement pitch in the column direction" is indefinite, submits that there is no explanation of the "pitch of the column direction," and requests clarification thereof.

It is respectfully submitted that, as is known to those skilled in the art, "pitch" is "the measurement from the center of a pixel to the center of the adjoining pixel. It adds together both the width or height of a pixel plus the gap between the pixels" (See definition of "pitch" by SHARP Microelectronics of the Americas, downloaded from the Internet, a copy of which is included herewith).

Applicants call the Examiner's attention to the paragraph beginning on line 3 of page 11, which recites:

As shown in FIG. 3, the neighboring partitions form a column space 31 including wide portions and narrow portions that are alternating. The position of the **wide portion in the column direction is shifted from that of the neighboring column by one-half of a cell pitch in the column direction**. A cell as a display element is formed in each wide portion. Cells 51, 52 and 53 of one line are indicated by chain-lined circle as representatives in the figure. The display line is a set of cells that are lighted for displaying a line having the minimum width in the horizontal direction. The **cells 51, 52 and 53** of three columns are used for reproduce a color of a pixel of an input image. (emphasis added)

Thus, it is respectfully submitted that a distance for the pitch in the column direction is clearly provided.

However, claims 1, 3, 14 and 15 have been amended for clarity. Although the Examiner

alleges that the pitch of the display line is the width of such row line (in Office Action, page 7, paragraph 3), it is respectfully submitted that, while this assertion is correct for a general display, it is not correct for the present invention because one display line (an odd number line) and an adjoining display line (an even number line) are overlapped with one another partially in the present invention (see FIG. 5 in the present invention and FIG. 2 which is attached hereto.

REJECTION UNDER 35 U.S.C. §103:

In the Office Action, at page 3, item 5, the Examiner rejected claims 1-15 under 35 U.S.C. §103(a) as being unpatentable over Betsui et al. (U.S. Patent No. 5,825,128; hereinafter referred to as Betsui et al.) in view of Shigeta (U.S. Patent No. 5,659,226; hereafter referred to as Shigeta). The reasons for the rejection are set forth in the Office Action and therefore not repeated. Applicant traverses this rejection and respectfully request reconsideration.

Independent claims 1, and claims 3, 14 and 15 in similar fashion, have been amended for clarification, claim 1 reciting: "...wherein a display line pitch is smaller than a cell arrangement pitch in the a column direction, the display line pitch being a measurement in a vertical direction from a center of one display line to a center of an adjoining display line and the cell pitch being a measurement in a vertical direction from a center of one cell to a center of an adjoining cell.""

As noted above, the terminology "pitch" is a measurement from the center of a pixel to the center of the adjoining pixel. It adds together both the width or height of a pixel plus the gap between the pixels. Thus, a display line pitch is a measurement from the center of a display line to the center of the adjoining display line. In addition, the pitch in the column direction is described above. Thus, it is clear, for example, from FIG. 4B of the present invention, the display line pitch is smaller than a cell pitch in the column direction in the display surface in which cells of a display line are arranged in a zigzag fashion in the present invention.

As noted by the Examiner, Betsui fails to expressly teach performing an interlaced display by changing the combination of cells of a display line that is perpendicular to the column direction in every field between the neighboring cell columns of the same light emission color, as is recited in independent claims 1 and 3 of the present claimed invention.

Shigeta does not teach an interlaced display. The interlaced display means a format of display in which a display of odd numbered line data and a display of even numbered line data are separated from one another in a temporal manner. The descriptions in Shigeta pointed out by the Examiner (col. 5, lines 7-54 and col. 6, lines 23-38) have no relationship with the

interlaced display. As noted in a previous response, Shigeta et al. teaches that resolution in the vertical direction is improved by deviating positions of neighboring cells from each other - see Shigeta et al., col. 5, lines 7-54. However, Shigeta et al. fails to teach that an interlaced display is performed on a display surface where positions of neighboring cells are shifted from each other. Figs. 8 and 9 and col. 6, lines 23-38, of Shigeta merely show that addressing is performed separately for odd columns and even columns in one row. A display of odd columns and a display of even columns are not performed in a time-sharing manner. Shigeta et al. fails to describe that a set of input data is divided into odd rows and even rows. Stated differently, the display disclosed by Shigeta is a progressive display.

As Applicants noted in the previous Office Action response, Shigeta actually teaches away from the method of the present invention by **teaching the conventional "three-electrode structure," which has red, green and blue discharge spaces combined to form a unit light emitting region,** reciting (col. 4, line 62 through col. 5, line 6: "Discharge spaces EU(R), EU(G), and EU(B) which can respectively perform a color display are formed by the discharge spaces of three colors having different light emission colors which are sequentially arranged in the horizontal direction. Claim 1 of Shigeta recites:

"A plasma display apparatus comprising: a plurality of column electrodes which extend in parallel to each other in a vertical direction; light emission layers which are made of fluorescent material films of R (red), G (green), and B (blue) and which extend in parallel to each other along said column electrodes and in which **colors of emitted light of adjacent layers are different;** and a plurality of row electrodes which extend in a horizontal direction perpendicular to said column electrodes and which form unit light emitting regions at positions near their intersecting portions with said column electrodes, each of said row electrodes defining a scanning line, wherein among said unit light emitting regions, two regions which are neighboring in said horizontal direction are arranged so as to deviate from each other in said vertical direction."

(emphasis added)

Further, col. 4, lines 66 through col. 5, line 6 of Shigeta recites: "**One pixel cell Pui,j of the PDP in which those three discharge spaces EU(R), EU(G) and EU(B) serve as one unit is formed as a unit light emitting region.** That is, **one pixel cell comprises the three discharge spaces EU(R), EU(G), and EU(B).** In each discharge space, the discharge is started, maintained, and erased by three electrodes of the row electrodes comprising two row electrodes Xi and Yi and the column electrode which intersects those row electrodes" (emphasis added).

Even in FIG. 10 of Shigeta, when the three discharge spaces are staggered, Shigeta teaches (col. 8, lines 33-36): "...one pixel cell PU of the PDP is formed by setting three unit light emitting regions EU(R), EU(G), and EU(B) of different light emission colors which are neighboring to one unit as shown in the diagram." Thus, Shigeta does not teach or suggest changing a combination of cells of a same light emission color of a display line, as is taught by the present invention.

Thus, it is respectfully submitted that independent claims 1, 3, 14 and 15 of the present claimed invention are patentable under 35 U.S.C. §103(a) over Betsui et al. (U.S. Patent No. 5,825,128) in view of Shigeta (U.S. Patent No. 5,659,226). Since claims 2 and 4-13 depend from independent claims 1 and 3, respectively, claims 2 and 4-13 are submitted to be patentable under 35 U.S.C. §103(a) over Betsui et al. (U.S. Patent No. 5,825,128) in view of Shigeta (U.S. Patent No. 5,659,226) for at least the reasons that claims 1 and 3 are submitted to be patentable under 35 U.S.C. §103(a) over Betsui et al. (U.S. Patent No. 5,825,128) in view of Shigeta (U.S. Patent No. 5,659,226).

CONCLUSION:

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot, and further, that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited by the Examiner contacting the undersigned attorney for a telephone interview to discuss resolution of such issues.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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